

REMARKS/ARGUMENTS

In the June 20, 2005, Non-Final Office Action, claims 1-10 were rejected. In the present response, claims 2-6 and 8-9 were amended to change the word "A" beginning each claim to "The". The limitations of dependent claims 7 and 10 were amended into claim 1. Claims 7 and 10 were canceled without prejudice. Claims 2-5 and 8 were amended for consistency with amended claim 1.

Thus, claims 1-6 and 8-9 are pending. No new matter was added.

Double Patenting

Claims 1-10 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 of copending U.S. Patent Application Serial No. 10/171,206 in view of Wu *et al.* (U.S. Patent No. 6,039,872). Claims 1-7 and 9-10 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 of copending U.S. Patent Application Serial No. 10/171,207 in view of Wu *et al.*, claims 1-5 and 8-12 of copending U.S. Patent Application Serial No. 10/426,601 in view of Wu *et al.*, and claims 1-4 and 6-8 of copending U.S. Patent Application Serial No. 10/643,598 in view of Wu *et al.*

Attached herewith are terminal disclaimers to each of the aforementioned copending, co-owned applications. The present application and U.S. Patent Application Serial Nos. 10/171,206, 10/171,207, 10/426,601, and 10/643,598 were, at the time the invention of the present application was made, owned by E. I. du Pont de Nemours and Company. Applicants thus submit that the obviousness-type double patenting rejection and the provisional rejections have been obviated.

Rejections Under 35 U.S.C. § 102(b)

Claims 1, 3, 5-7, and 10 were rejected as being anticipated by Mizutani *et al.* (U.S. Patent No. 5,780,530) as evidenced by Wu *et al.* Applicants respectfully traverse these rejections.

The curing mechanism of Applicants' claimed invention is based on radical polymerization of C=C double bonds and moisture curing. The coating composition disclosed in Mizutani *et al.* comprises a film-forming polyol resin (e.g., a silicone

polyol), a curing agent for the polyol (melamine resin or blocked polyisocyanates), and a hydrolyzate/polycondensate of trialkoxysilane or tetraalkoxysilane. The silicone polyol contains hydroxyl groups and, optionally, alkoxysilane groups. According to the formula at column 5, line 55, of Mizutani *et al.*, C=C double bonds may also be present. Curing is effectuated by reaction of the hydroxyl groups of the polyol resin with the functional groups in the curing agent (e.g., NCO groups).

Even if radical polymerization of double bonds may occur by initiation with thermal energy as asserted by the Examiner, there is no indication in Mizutani *et al.* that the optionally present C=C double bonds are polymerized via radical polymerization to cure the coating composition. The Examiner relies on Wu *et al.* to establish that radical polymerization may occur by heat. Applicants do not disagree with the Examiner that radical polymerization can occur by heat; this is well-known to one of ordinary skill in the art. However, “the extrinsic evidence [Wu *et al.*] must make clear that the missing descriptive matter is *necessarily* present in the thing described in the reference [Mizutani *et al.*].” MPEP § 2112(IV) (quoting *In re Oelrich*, 666 F.2d 578, 581-82 (CCPA 1981)) (internal quotations omitted) (emphasis added). The extrinsic evidence presented by the Examiner fails to do so. Nothing in Mizutani *et al.* indicates that the coating compositions therein are cured by radical polymerization, and the mere fact that radical polymerization may occur by heat does not rise to the level evidence tending to show inherency. Indeed, the *intrinsic* evidence in Mizutani *et al.* itself confirms Applicants’ position. For example, radical polymerization initiated by thermal energy requires thermal radical initiators. Mizutani *et al.*, however, fail to disclose *any* thermal initiators. Thus, Applicants respectfully submit that curing via radical polymerization is not disclosed either expressly or inherently in Mizutani *et al.*

Because claims 3 and 5-6 are dependent claims, which recite even further limitations to the claim that has already been traversed, Applicants rely upon the arguments presented above in rebuttal to the Examiner’s assertion that claims 3 and 5-6 are anticipated by Mizutani *et al.*

Rejections Under 35 U.S.C. § 103(a)

Claims 1-7 and 9-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Mizutani *et al.* in view of Wu *et al.* Applicants respectfully traverse these rejections.

To further clarify that motor vehicles and vehicle parts thereof are the substrates of the present invention, Applicants have amended claim 1 to incorporate the limitations of claim 10. Further, Applicants have amended claim 1 to incorporate the limitations of claim 7. Thus, the substrate of claim 1 is now vehicles, vehicle parts, or combinations thereof and the binder system containing at least one binder having free-radically polymerizable olefinic double bonds and hydrolysable alkoxysilane groups additionally comprises hydroxyl groups.

Because claim 1 now incorporates the limitations of claim 7, Applicants' response is directed to the Examiner's rejection of claim 7.

Assuming, *arguendo*, that Mizutani *et al.* and Wu *et al.* can be combined, Applicants respectfully submit that the arguments submitted above in response to the anticipation rejections apply equally to the obviousness rejections. Specifically, Wu *et al.* adds nothing to the Mizutani *et al.* disclosure that relates to differences between Mizutani *et al.* and the presently claimed invention. Wu *et al.* merely discloses that radical polymerization can be initiated by heat or UV radiation, a concept well known in the art.

Because claims 2-6 and 9 are dependent claims, which recite even further limitations to the claim that has already been traversed, Applicants rely upon the arguments presented above in rebuttal to the Examiner's assertion that claims 2-6 and 9 are unpatentable over Mizutani *et al.* in view of Wu *et al.*

Claims 1-6 and 8-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gaglani (U.S. Patent No. 5,312,943) in view of Murase (U.S. Patent No. 4,246,368) in further view of Wu *et al.* Claims 2-6 and 8-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Maag *et al.* (U.S. Patent No. 6,333,077) in view of Gaglani in further view of Wu *et al.* Claim 7 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Gaglani in view of Murase in further view of Wu *et al.*, or Maag *et al.* in view of Gaglani in further view of Wu *et al.*, in

further view of Bergstrom *et al.* (U.S. Patent No. 6,384,125). Applicants respectfully traverse these rejections.

Applicants respectfully disagree with the Examiner's characterization of Gaglani. In the office action, the Examiner described Gaglani as disclosing "a process for protective covering over automobile (See column 1, lines 10-12)." The *entire* quote of column 1, lines 10-12, of Gaglani actually is "Conformal coatings provide a protective covering over automobile, aerospace and military *electronic printed circuited boards*." (emphasis added). Grammatically, the word "automobile", along with the words "aerospace" and "military", are adjectives that modify the compound noun "electronic printed circuited boards". If automobile was a noun in this sentence, correct grammar would require that the word automobile be plural (i.e., "protective covering over automobiles") and that automobile actually be used as a noun, in a phrase such as "automobiles *and* aerospace and military electronic printed circuited boards" (where only aerospace and military would modify the compound noun). That, however, is simply not the case in Gaglani, where the word automobile is clearly used as an adjective. The remainder of Gaglani's specification confirms Applicants' interpretation. At *no* other place in specification is the word "automobile" mentioned (let alone any synonym thereof).

Thus, under the correct interpretation of Gaglani, Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness. Murase is directed solely to *powder* coating compositions (see column 1, lines 5-10). Gaglani, on the other hand, is directed solely to solvent-free, low viscosity liquid compositions (see column 2, lines 63-67). Gaglani, as discussed above, is not directed to a process for the coating of vehicles. The coating of vehicle/automotive bodies requires different technology and different quality demands compared with coatings used for protecting *printed circuit boards*. The loads such coatings are exposed to are also completely different. As such, one of ordinary skill in the field of automotive coatings would not look to Gaglani to produce Applicants' claimed invention. Further, as the Examiner admits, Gaglani fails to teach multi-layer coatings. Because of the different demands of automotive coatings and protective coatings for printed circuit boards and because there is no suggestion, motivation, or disclosure in either Gaglani or Murase to modify Gaglani to produce multi-layer

automotive coatings, Applicants respectfully submit that it was not obvious to use the compositions of Gaglani as clear coats or pigmented top coats in a multi-layer coating process for automobiles.

Applicants further submit that the present invention is nonobvious over Maag *et al.* in view of Gaglani. Independent of the fact of where the reactive groups for the secondary curing mechanism is present, the second curing mechanism of Maag *et al.* is different from that claimed in the present invention. In Applicants' claim 1 invention, the second curing mechanism is the moisture curing (hydrolysis) of alkoxy silane groups (see page 4, lines 19-23 of Applicants' specification), whereas in Maag *et al.* the second curing mechanism is a polycondensation or addition reaction between complementary reactive functional groups (see column 4, line 63 – column 5, line 53). Thus, the disclosure of Maag *et al.* teaches away from the Applicants' claimed second curing mechanism.

Further, the Examiner's assertion that the oligomers in Gaglani are silicone (meth)acrylates is incorrect. The oligomers therein are polyurethane (meth)acrylates with alkoxy silane groups (see Formulas I and II). These oligomers are chemically completely different from the (meth)acrylates disclosed in Maag *et al.* As such, there is no suggestion or disclosure in Gaglani and/or Maag *et al.*, either alone or in combination, of Applicants' claimed invention.

Even if the above references can be combined, Applicants respectfully submit that the Examiner's characterization of Bergstrom *et al.* is inaccurate and does not supply the disclosure missing from Gaglani, Murase, and Maag *et al.* Specifically, Bergstrom *et al.* do *not* teach that hydroxyl groups are functionally equivalent to alkoxy groups for providing moisture curing. Bergstrom *et al.* disclose the basic principle of the vulcanization mechanism for silicone sealants (see column 2, lines 24-33). Curing is effectuated by hydrolysis/condensation of silanol ($-\text{SiOH}$) or alkoxy silane ($-\text{Si(OR)}_3$) groups. The statement at column 9, lines 51-52, that is "the polyorganosiloxane contains functional radicals, e.g. hydroxyl [or] alkoxy groups," means that the *radicals* are linked to the silicon atom (see the aforementioned groups). Hydrolysis of single alkoxy or hydroxyl groups is not disclosed, and is not chemically feasible. In other words, the OH groups mentioned in Bergstrom *et al.* are part of the *SiOH groups*, whereas in the present invention, in addition to the


alkoxysilane groups ($-\text{Si}(\text{OR})_3$), single OH groups are present, linked to the backbone of the binder, and are not hydrolysable. Unlike the hydroxyl groups in the present invention, the hydroxyl groups in Bergstrom *et al.* participate in curing.

Applicants thus respectfully submit that it was not obvious in light of either Gaglani in view of Murase in further view of Wu *et al.* or Maag *et al.* in view of Gaglani in further view of Wu *et al.*, in further view of Bergstrom *et al.*, to have additional hydroxyl groups in the binder system of the present invention. Further, because claims 2-6, and 8-9 are dependent claims, which recite even further limitations to the claim that has already been traversed, Applicants respectfully submit that these claims are patentable over any combination of the references cited above.

Summary

In view of the foregoing amendments and remarks, Applicants submit that this application is in condition for allowance. In order to expedite disposition of this case, the Examiner is invited to contact Applicants' representative at the telephone number below to resolve any remaining issues. Should there be a fee due which is not accounted for, please charge such fee to Deposit Account No. 04-1928 (E.I. du Pont de Nemours and Company).

Respectfully submitted,

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